

## Claims

- [c1] 1.A photoelectric receiver circuit for converting an optical signal to an electrical signal, comprising:  
first and second transimpedance amplifiers,  
a photodiode having a first end connected to an inverting input of the first transimpedance amplifier and a second end connected to an inverting input of the second transimpedance amplifier,  
a differential amplifier having inputs, AC coupled, to outputs of the first and second transimpedance amplifiers, and  
wherein when higher and lower voltages are respectively applied to the non-inverting inputs of the first and second transimpedance amplifiers, a substantially constant bias voltage is maintained on the photodiode.
- [c2] 2.The photoelectric receiver circuit of claim 1 in which the transimpedance amplifiers each comprise an operational amplifier having an inverting input, a non-inverting input and an output, and a feedback resistor connected between the inverting input and the output.
- [c3] 3.The photoelectric receiver circuit of claim 2 comprising a DC current source supplying a DC current to the inverting input of each operational amplifier.
- [c4] 4.The photoelectric receiver circuit of claim 2 wherein at least one of the feedback resistors is a variable resistor.
- [c5] 5.The photoelectric receiver circuit of claim 4 wherein both of the feedback resistors are variable resistors.
- [c6] 6.The photoelectric receiver circuit of claim 3 wherein the level of DC current applied to each inverting input is controlled by the output of the respective transimpedance amplifiers through a low pass filter.
- [c7] 7.An optical transceiver comprising a photoelectric receiver circuit for converting an optical signal to an electrical signal, the photoelectric receiver circuit comprising:  
first and second transimpedance amplifiers,  
a photodiode having a first end connected to an inverting input of the first

transimpedance amplifier and a second end connected to an inverting input of the second transimpedance amplifier, and  
a differential amplifier having inputs, AC coupled, to outputs of the first and second transimpedance amplifiers,  
two voltages for applying a bias voltage to the photodiode,  
wherein when higher and lower voltages are respectively applied to the non-inverting inputs of the first and second transimpedance amplifiers, a substantially constant bias voltage is maintained on the photodiode.

- [c8] 8.The optical transceiver of claim 7 in which the transimpedance amplifiers each comprise an operational amplifier having an inverting input, a non-inverting input and an output, and a feedback resistor connected between the inverting input and the output.
- [c9] 9.The optical transceiver of claim 8 comprising a DC current source supplying a DC current to the inverting input of each operational amplifier.
- [c10] 10.The optical transceiver of claim 8 wherein at least one of the feedback resistors is a variable resistor.
- [c11] 11.The optical transceiver of claim 10 wherein both of the feedback resistors are variable resistors.
- [c12] 12.The optical transceiver of claim 9 wherein the level of DC current applied to each inverting input is controlled by the output of the respective transimpedance amplifiers through a low pass filter.